CLAIM AMENDMENTS

1. (currently amended) A method for producing a conductive and transparent zinc oxide layer on a substrate by reactive sputtering, the ~~process~~ method having a hysteresis region ~~, characterized by~~ and comprising the following steps:

using as the substrate a doped metallic Zn target with a ~~doping is used, the~~ doping content of ~~the target being~~ less than 2.3 at-%,

heating ~~the heater for~~ the substrate ~~is set such that~~ to a substrate temperature of greater than 200 °C ~~is set~~,

setting a dynamic deposition rate of greater than 50 nm*m/min ~~is set that corresponds~~ and corresponding to a static deposition rate of more than 190 nm/min, and

selecting a stabilized operating point within [[the]] an unstable process region ~~is selected that is located~~ between the transition point between a stable, metal process and an unstable process and the inflection point of the stabilized process curve.

2. (currently amended) The method according claim 1 wherein a target with a doping content of less than 1.5 at-% ~~, particularly of less than 1 at-%~~ is used.

3. (previously presented) The method according to claim 1 wherein a target with aluminum as the doping agent is used.

4. (currently amended) The method according to claim 1 wherein the substrate is heated to temperatures above 250 °C ~~,~~ ~~particularly to temperatures above 300 °C~~.

5. (currently amended) The method according to claim 1 wherein a dynamic deposition rate of greater than 80 nm*m/min ~~,~~ ~~particularly of greater than 100 nm/min~~ is set that corresponds to a static deposition rate of greater than 300 ~~, particularly greater than 380~~ nm/min.

6. (currently amended) The method according to claim 1 wherein a dual magnetron arrangement with medium frequency [[(mf)]] excitation is used.

7. (currently amended) The method according to claim 1 wherein a dynamic flow process is carried out ~~, where~~ in which the substrate is moved during sputtering.

8. (withdrawn) A conductive and transparent zinc oxide layer, produced with the method according to claim 1, characterized in that the content of doping agent, particularly of aluminum, in the produced oxide layer is less than 3.5 at-%, that the resistivity is less than $1*10^{-3}$ W cm, that the charge carrier

mobility is greater than 25 cm^2/V s and that the averaged transmittance of 400 to 1100 nm is greater than 80%.

9. (withdrawn) The oxide layer according to claim 8 wherein the content of doping agent is less than 3 at-%, particularly less than 2.5 at-%.

10. (withdrawn) The oxide layer according to claim 8 wherein the resistivity is less than $5*10^{-2}$ W cm.

11. (withdrawn) The oxide layer according to claim 8 wherein the charge carrier mobility is greater than 35 cm^2/V s.

12. (withdrawn) The oxide layer according to claim 8 wherein the averaged transmittance of 400 to 1100 nm is greater than 82%.

13. (withdrawn) The oxide layer according to claim 8 wherein the layer comprises aluminum as the doping agent.

14. (withdrawn) Use of an oxide layer according to claim 8 in a solar cell.

15. (withdrawn) The use according to claim 14 in a crystalline silicon thin-film solar array.

16. (withdrawn) The use according to claim 14 in an amorphous and crystalline silicon tandem solar array.

17. (new) The method according claim 1 wherein a target with a doping content of less than 1 at-% is used.

18. (new) The method according to claim 1 wherein the substrate is heated to temperatures above 300 °C.

19. (new) The method according to claim 1 wherein a dynamic deposition rate of greater than 100 nm*m/min is set that corresponds to a static deposition rate of greater than 380 nm/min.